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## **List of Documents Referenced in the updated State Management Plan**

- 1) *State of Nevada (319) Nonpoint Source Pollution Management Program (SMP)*, Nevada Department of Conservation & Natural Resource, Division of Environmental Protection, August 1989, updated September 1999.
- 2) *Nevada Water Quality Assessment 305(b) Report*, Nevada Department of Conservation & Natural Resource, Division of Environmental Protection, April 1998.
- 3) *State of Nevada Comprehensive State Ground Water Protection Program - Self-Assessment*, Nevada Department of Conservation & Natural Resource, Division of Environmental Protection, February 1996, updated March 1998.
- 4) *State of Nevada Comprehensive State Ground Water Protection Program - Profile*, Nevada Department of Conservation & Natural Resource, Division of Environmental Protection, February 1994, revised February 1996, updated March 1998.
- 5) *State of Nevada Wellhead Protection Program*, Nevada Department of Conservation & Natural Resource, Division of Environmental Protection, February 1994.
- 6) *State of Nevada Generic State Ground Water Pesticide Management Plan*, Department of Agriculture, Bureau of Plant Industry, April 1999.
- 7) *Draft Nevada State Water Plan*, Nevada Department of Conservation & Natural Resources, Division of Water Planning, January 1999.
- 8) *Handbook of Best Management Practices*, Nevada Department of Conservation & Natural Resource, Divisions of Environmental Protection and Conservation Districts, November 1994.
- 9) *Nonpoint Source Guidance*, U.S. Environmental Protection Agency, Office of Water, July 1987.
- 10) *Nonpoint Source Program and Grants Guidance for Fiscal Year 1997 and Future Years*, U.S. Environmental Protection Agency, Office of Water, May 1996.
- 11) *Section 319 - Federal Consistency Guidance - Federal Consistency with State Nonpoint Source Management Programs*, U.S. Environmental Protection Agency, Office of Water.
- 12) *National Water Quality Assessment Program (NAWQA)* - P.P. Leahy and T.H. Thompson, USGS Open File Report 94-70.
- 13) *Water Quality Regulations*, Nevada Department of Conservation & Natural Resource, Division of Environmental Protection, revised July 1999.



**MAPS**

## Acronyms

BAC - Bureau of Air Quality  
BCA - Bureau of Corrective Actions  
BFF - Bureau of Federal Facilities  
BHPS - Bureau of Health Protection Services  
BMR&R - Bureau of Mining Regulation and Reclamation  
BMP - Best Management Practices  
BWM - Bureau of Waste Management  
BWPC - Bureau of Water Pollution Control  
BWQP - Bureau of Water Quality Planning  
CERCLA - Comprehensive Environmental Response, Compensation and Liability Act  
CRBCOG - Carson River Basin Council of Governments  
CRMP - Coordinated Resource Management Plan  
CRP - Conservation Reserve Program  
CSGWPP - Comprehensive State Ground Water Protection Program  
CWA - Clean Water Act  
CWAP - Clean Water Action Plan  
CWSD - Carson Water Sub-conservancy District  
DRI - Desert Research Institute  
EMSL - Environmental Monitoring and Support Laboratory  
EQIP - Environmental Quality Incentive Program  
EWP - Emergency Watershed Protection  
FIFRA - Federal Insecticide, Fungicide, Rodenticide Act  
FSA - Farm Service Agency  
GIS - Geographic Information System  
GRTS - Grants Reporting and Tracking System  
HQWs - Higher Quality Waters  
IPM - Integrated Pest Management  
ISDS - Individual Sewage Disposal System  
LMWQF - Lake Mead Water Quality Forum  
LUST - Leaking Underground Storage Tank  
LVWCC - Las Vegas Water Coordinated Committee  
MOA - Memorandum of Agreement  
MOU - Memorandum of Understanding  
NAC - Nevada Administrative Code  
NAWQA - National Water Quality Assessment Program  
NDCNR - Nevada Department of Conservation & Natural Resources  
NDEP - Nevada Division of Environmental Protection  
NDF - Nevada Division of Forestry  
NDHR - Nevada Department of Human Resources  
NDOA - Nevada Department of Agriculture  
NDOT - Nevada Department of Transportation  
NDWP - Nevada Division of Water Planning

NEAT - Nevada Eco-system Advisory Team  
NPDES - National Pollution Discharge Elimination System

**Acronyms (cont.)**

NPS - Nonpoint Source  
NRCS - Natural Resource Conservation Service  
NRS - Nevada Revised Statutes  
NWR - National Wildlife Refuge  
SAR - State Assessment Report  
SEC - State Environmental Committee  
SEZ - Stream Environmental Zone  
SMP - State Management Plan  
STORET - STORage and RETrival System (EPA database for water quality-related data)  
SWAP - Source Water Assessment Program  
TDS - Total Dissolved Solids  
TMDLs - Total Maximum Daily Loads  
TMWRF - Truckee Meadows Water Reclamation Facility  
TP - Total Phosphorus  
TRPA - Tahoe Regional Planning Agency  
TSCA - Toxic Substance Control Act  
TSS - Total Suspended Solids  
TVA - Tennessee Valley Authority  
UIC - Underground Injection Control Program  
updated SMP - updated State Management Plan (this document)  
U.S.BIA - United States Bureau of Indian Affairs  
U.S.BLM - United States Bureau of Land Management  
U.S.BOR - United States Bureau of Reclamation  
U.S.DOD - United States Department of Defense  
U.S.DOE - United State Department of Energy  
U.S.DOI - United State Department of Interior  
U.S.EPA - United States Environmental Protection Agency  
U.S.EPA Region IX - covers Arizona, California, Nevada, Hawaii, the Marianas, and Guam  
U.S.FS - United States Forest Service  
U.S.FWS - United States Fish and Wildlife Service  
USGS - United States Geological Survey  
VA - Vulnerability Assessment  
WET - Water Education for Teachers  
WHPP - Wellhead Protection Program  
WRAS - Watershed Restoration Action Strategies

## **I. Introduction**

Nonpoint source pollution can be defined as pollution that is contained in storm water or snowmelt runoff as it moves over land surfaces. The pollution can directly impact surface bodies of water or percolate through the soil and reach the ground water. Nonpoint sources of pollution are described as “diffuse sources”, in contrast to “point” source pollution which is discharged through a pipe or a discrete point.

Nonpoint source pollution is typically runoff from agricultural lands, animal feedlots, urban areas, construction sites, mining operations, logging roads, failing septic tanks and salted winter roads. Also, the removal of stream side vegetation causes two things to happen: 1) surface runoff, potentially carrying pollutants, can move rapidly into the surface waters, instead of being held back by the vegetation; and 2) the stream bank becomes unstable and collapses into the river or creek, bringing sediment and pollutants into the waters. Typical pollutants that nonpoint sources contribute are sediment, nutrients, pesticides, bacteria, oil and grease, metals and thermal variations. Hydrologic modification, such as dams and road crossings, can also cause NPS pollution by accelerating erosion.

The Federal Water Pollution Control Act, more commonly known as the Clean Water Act (CWA), was created in 1972. Originally, the focus of the CWA was to control and abate water pollution from point sources, such as industrial discharges and sewage treatment plants. After 15 years of considerable gains in controlling and reducing the pollution loads from these sources, not all water quality problems were resolved. Several studies and surveys have shown that the majority of the remaining impairments in water quality result from nonpoint source pollution. In 1987, Congress amended the CWA to focus greater national efforts on nonpoint sources. Within the introductory pages of the amended Act, the following national policy statement appears:

"It is the national policy that programs for the control of nonpoint source pollution be developed and implemented in an expeditious manner so as to enable the goals of this Act to be met through the control of both point and nonpoint source pollution."

Section 319 was added to the CWA as part of the 1987 amendments to specifically address nonpoint sources of pollution. Under section 319, States are required to assess nonpoint source pollution problems and causes within the State, and adopt and implement management programs to control these sources. Section 319 also requires States to generate two specific reports: 1) a State's Assessment Report which describes the nature, extent, effect and cause of nonpoint source pollution, and the program and methods to control it; and 2) a State Management Program which provides an overview of the State's nonpoint source programs as well as a summary of what the State intends to accomplish in the next four fiscal years, beginning after the date of program submission.

The Nevada Division of Environmental Protection, through its Nonpoint Source program, manages activities and implements projects that prevent and reduce loading of nonpoint source pollution into the surface and ground waters of the State. In 1989, the U.S.EPA approved the *State of Nevada (319) Nonpoint Source Pollution Management Program (SMP)* (Appendix 2,

#1), which created the basis for Nevada's nonpoint source program. The 1989 SMP was intended to fulfill the specific content requirements for the State Management Program described in section 319(b)(2) of the CWA. This section requires that the State address the following six topics in its State Management Program:

- 1) identification of the best management practices and measures which will be used to reduce pollutant loadings resulting from each category, subcategory or particular nonpoint source designated in the State's Assessment Report, taking into account the impact of the practice on groundwater quality.
- 2) identification of the programs (including, as appropriate, non-regulatory or regulatory programs for enforcement, technical assistance, financial assistance, education, training, technology transfer, and demonstration projects) to achieve implementation of the best management practices designated under subparagraph (A).
- 3) a schedule containing annual milestones for (i) utilization of the program implementation methods identified in subparagraph (B), and (ii) implementation of the best management practices identified in subparagraph (A) by the categories, subcategories, or particular nonpoint sources designated in the State's Assessment Report.
- 4) a certification by the attorney general of the State (or chief attorney of the State water pollution control agency) that the laws of the State provide adequate authority to implement such management program or, if there is not adequate authority, a list of such additional authorities as will be necessary to implement such management program and a schedule and commitment by the State to seek such additional authorities as expeditiously as practical.
- 5) sources of Federal and other assistance and funding [other than that provided in subsections (h) and (i)] which will be available in each fiscal year for supporting implementation of such practices and measures and the purposes for which such assistance will be used in each of such fiscal years.
- 6) the Federal financial assistance programs and Federal development projects for which the State will review individual assistance applications or development projects for their effect on water quality pursuant to the procedures set forth in Executive Order 12372 as in effect on September 17, 1983, to determine whether such assistance applications or development projects would be consistent with the program prepared under this subsection.

Since the approval of the State Management Plan in 1989, NDEP has negotiated several annual workplans with U.S.EPA. These workplans address detailed tasks and milestones in implementing Nevada's nonpoint source program; each work plan built upon the previous one. Now, almost ten years later, NDEP has built a solid basis for the implementation of the nonpoint

source program and has addressed the six required topics.

This update to the State Management Plan (updated SMP) accomplishes the following things: 1) it formalizes Nevada's updated approach to protecting the water quality of the State from nonpoint sources of pollution; 2) it reflects the current management and implementation strategies, which use the lessons learned in the past to guide a more mature nonpoint source program for the future; 3) it is consistent with the requirements of CWA section 319(b)(2), namely, addressing the required six topics referenced above; and 4) it also redefines the original document according to U.S.EPA's Nine Key Elements as presented in EPA's Nonpoint Source Program and Grants Guidance for Fiscal Year 1997 and Future Years, and the Clean Water Action Plan.

This document is made up of eight chapters and five appendices. Chapter 1 contains the program's vision and goals; chapter 2 describes Nevada's characteristics in terms of topography, hydrogeology, water quality impairments, and major areas of nonpoint source pollution concerns; chapter 3 contains the goals, milestones and time frames for implementing the nonpoint source program; chapter 4 describes the strategies to implement the nonpoint source program; chapter 5 provides an overview of best management practices; chapter 6 describes nonpoint source-related efforts at the federal, state and local levels; chapter 7 describes the process through which federal projects are implemented in the State in a manner that is consistent with the goals of the nonpoint source program; and chapter 8 describes the processes to evaluate the efficiency and effectiveness of the nonpoint source program, as well as feed-back mechanisms. Six maps can be found at the end of the document. Please note that map 1 was generated using state generated (Nevada State Engineer) Hydrographic Regions data layer and that maps 4, 5 and 6 were generated using USGS's Hydrographic Units data layers. Although these coverages are very similar, they do generate some differences in the delineated units. For example, the State generated layer contains 14 divisions, but the USGS generated layer, at the 4-digit HUC level contains 12 divisions and at the 6-digit HUC level, it contains 16 divisions.

*A. Program Vision and Goals -- (Key Element #1)*

Nevada's Water Pollution Control Law (Nevada Revised Statutes 445A.305 - 445A.340) comprises the enabling legislation for Nevada's Water Quality Management Program. It is the policy of the State of Nevada and the purpose of the above body of law to:

- (1) Maintain the quality of the waters of the state consistent with the public health and enjoyment, the propagation and protection of terrestrial and aquatic life, the operation of existing industries, the pursuit of agriculture, and the economic development of the State; and
- (2) Encourage and promote the use of methods of waste collection and pollution control for all significant sources of water pollution (including point and diffuse sources).

Nevada Revised Statutes (NRS) 445A.335 defines diffuse source as "any source of water pollution which is diffused to the extent that it is not readily discernible and cannot be confined

to a discrete conveyance. This term is intended to be equivalent to the term ‘nonpoint source’ as used in federal statutes and regulations.” Nevada Administrative Code (NAC) 445A.309 further defines diffuse source as: 1) agricultural activity, including return flows from irrigation; 2) silvicultural activity; 3) mining activity; 4) construction of buildings, roads, dams, utility lines or other improvements or facilities; 5) runoff from roads, streets and railroads; 6) construction or use of recreational trails; 7) modification of watercourses or stream channels; and 8) runoff from urban areas.

A significant mechanism to control nonpoint source pollution is the implementation of best management practices (BMPs). “Best practices” are defined in NAC 445A.306 as “measures, methods of operation or practices which are reasonably designed to prevent, eliminate or reduce water pollution from diffuse sources and which are consistent with the best practices in the particular field under the conditions applicable. This term is intended to be equivalent to the term ‘best management practices’ as used in federal statutes and regulations.”

The State of Nevada is committed to protecting and managing both ground and surface waters of the State for beneficial uses. This commitment is made clear in the vision statement for NDEP’s NPS program: “All waters in the State support their beneficial uses and higher quality waters are maintained. All Nevadans are making the best possible water quality protection and management decisions, in coordination with others in their watersheds.”

The mission statement for NDEP’s nonpoint source program is based on its vision statement and further defines that commitment: “To prevent, control and abate the impacts of NPS pollution on the quality of the state’s surface and ground water through source reduction, improved land use management and the implementation of best management practices.”

The State has identified the following long-term goals to protect surface and ground waters:

*Goal #1: To achieve a downward trend in pollutant loads due to nonpoint sources of pollution for section 303(d) listed waters; to focus on the five top priority watersheds; and to have in place TMDLs and/or CRMPs in these watersheds within the next 15 years.*

*Goal #2: To educate (and involve) Nevadans about appropriate water quality protection activities related to priority nonpoint sources, focusing on urban issues and on riparian area health.*

*Goal #3: To coordinate water quality protection activities with State, Federal, local agencies and Tribes, to achieve implementation of BMPs (or other NPS control measures) associated with priority NPS categories, as they relate to each agencies’ mandates.*

## **II. Characterization of Water Quality Impairments**

### **A. Background -- Topographic and Hydrologic Characteristics**

For planning and management purposes, the unique topographic and hydrologic characteristics of Nevada, along with the patterns of land use and population distribution, pose certain challenges, especially for managing existing and potential sources of nonpoint source pollution. The topography of Nevada is characterized by long, narrow, roughly parallel mountain ranges oriented in a generally north-south direction, interspersed with nearly flat valleys or basins - hence the designation of “Basin and Range Province” for most of Nevada. The State’s major bodies of surface water are located in very discrete corridors, with a large portion of the State being devoid of perennial streams or lakes (see Map 3). Hydrogeologic conditions vary according to the state-wide distribution of three basic aquifer types: basin-fill, carbonate rock and volcanic (see Map 2). Basin fill aquifers occur throughout the state and are generally contained within closed basins. An extensive carbonate rock terrain covers much of the eastern and southern two-thirds of the state, and volcanic rock aquifers are present in several isolated locations. The climate of Nevada is semi-arid to arid, with precipitation and temperature varying widely between the northern and southern regions of the State. Nevada is the most arid state in the nation, with a total average precipitation of approximately nine inches per year. Annual precipitation can range from three to four inches in southern and central Nevada to over 40 inches in the Sierra Nevada Mountain Range. Of the total annual precipitation, approximately 10% accounts for stream runoff and ground water recharge; the remaining 90% is lost through evaporation and transpiration. (Appendix 2, #7)

In Nevada, there are 143,578 total miles of rivers, streams and creeks, of which 14,988 miles are perennial, 126,257 miles are intermittent, 1,782 miles are ditches and canals and 551 miles are shared border rivers. Due to the semi-arid to arid conditions in the State, only the perennial waters are assessed as part of the Nevada Ambient Monitoring Program. Of the total of 14,988 miles, 10.9% are assessed and 47.28% of the assessed waters are found to be partially or fully not supporting beneficial uses. Nonpoint sources account for 66.29% of the total pollution impact and natural background contributions account for the remaining. Of the constituents analyzed, Turbidity causes the greatest impact (31.1%), followed by Suspended Solids (22.7%), Total Phosphates as P (19.31%), Temperature (14.8%), pH (10.2%), and Total Nitrogen (1.8%). (Appendix 2, #2)

Nevada has 1,070 lakes, reservoirs or ponds with a total acreage of 533,239 and approximately 136,650 acres of wetlands. Of the total of 162,015 acres of lakes assessed, nonpoint sources account for 66.17% of the pollution impact and natural background contributions account for the remaining. Of the constituents analyzed, the item listed as Salinity/Total Dissolved Solids/Chlorides causes the greatest impact (55.73%), followed by Suspended Solids (22.99%) and Total Phosphates as P (22.99%). The contribution from Temperature and Unionized Ammonia was negligible. (Appendix 2, #2))

### **B. Major Drainage Basins in the State: (see Map 4)**

- 1) The Colorado River region makes up 12,376 square miles of Nevada. The Colorado River provides for hydroelectric power, recreation at Lake Mead and Lake Mohave and water for agricultural, industrial and municipal use. The large municipal areas of Clark County, Las Vegas, North Las Vegas and Henderson, are located here. The Colorado flows generally south, along the Arizona and California border and eventually drains into the Sea of Cortez, in northwest Mexico.
- 2) The Snake River region makes up 5,230 square miles in Northern Nevada and includes the watersheds of the Bruneau, Owyhee and Jarbidge Rivers, and Salmon Falls and Shoshone Creeks. These drainages join the Snake River in southern Idaho which eventually flows into the Columbia River and to the Pacific Ocean. This area is characterized mainly by agricultural land use (grazing) and small rural communities.
- 3) The Humboldt River is the longest river in Nevada; the entire Humboldt basin is contained within the state. Its headwaters are located in the Ruby, East Humboldt, Independence and Jarbidge mountains; it flows in a westward direction across northern Nevada and terminates in the Humboldt Sink. Industry in the region is predominantly agriculture and mining, with many small rural communities located along a major transportation corridor which parallels the entire length of the Humboldt River.
- 4) The Truckee River flows from Lake Tahoe and drains a portion of the eastern slope of the Sierra Nevada. It flows east through the cities of Reno and Sparks and terminates in Pyramid Lake. Along its course, the river provides water for municipal, industrial and agricultural uses, for hydroelectric power generation, recreation and fisheries including the support of endangered species of fish.
- 5) The Carson River drains the eastern slopes of the Sierra Nevada immediately south of Lake Tahoe and terminates in the Carson Sink. Along its course, water is utilized for agricultural supply, and for recreation, wildlife and fisheries.
- 6) The Walker River originates in California and drains the eastern slopes of the Sierra Nevada to the south of the Carson River. It flows through mostly agricultural lands, in the Smith and Mason Valleys and through the Walker River Indian Reservation, before terminating in Walker Lake.

### *C. Identification of Water Quality Impairments (Key Element #5)*

Nevada has identified water quality impairments and threats by nonpoint sources of pollution through the following assessment programs:

#### *C.1. Surface Water-Related Assessments*

The Nevada Water Quality Assessment 305(b) Report is based on data generated from Nevada's ambient monitoring program and on data generated from several water quality intensive field studies, conducted on the major river systems of the State (see Map 5). In addition, several lakes

and reservoirs have been added to the monitoring program. The monitoring network is used to assess compliance with water quality standards, conduct trend analyses, validate water quality models and support development of total maximum daily loads (TMDLs). The data are also used to support nonpoint source assessments, compile the 303(d) list of impaired waters, and update 208 Plan amendments.

When generating assessment reports or evaluating permit conditions, Nevada uses water quality data from several agencies. The data are analyzed and the water bodies are assessed using three methodologies. First, the water quality data are gathered and stored in the STORET database system and are made available for analyses and information; second, the “Evaluated Waters” methodology is applied, which means that land use patterns and location of pollution sources are taken into consideration as the overall context for the assessment of a body of water; and third, information is shared with qualified resource management professionals and available reports, studies and documents are used to generate a best professional judgement.

The following agencies collaborate in collecting water quality data:

- 1) The U.S. Geological Survey collects surface water quality data associated with several gauging stations. It also conducts several special studies such as the NAWQA and the NASQAN programs. The NAWQA special studies are related to water quality in the Las Vegas Valley area, the Carson and Truckee River basins, the Lake Tahoe Basin Study, the Walker Lake basin Study, the Carlin Trend Network and the Stillwater Environmental Monitoring. The NASQAN data-collection study includes the following water bodies in Nevada: the Colorado, the Carson, the Humboldt and the Truckee Rivers.
- 2) The Truckee Meadows Water Reclamation Facility collects Truckee River water quality data as a requirement of the facility’s NPDES discharge permit; the Clark County Sanitation District and Cities of Las Vegas and Henderson do the same to monitor Lake Mead and the Las Vegas Wash.
- 3) The Desert Research Institute maintains a state-funded program to sample the Truckee River.
- 4) There are some biological monitoring programs on the Truckee River and in Las Vegas Bay. In addition, NDEP and U.S.EPA Region IX are developing a rapid bio-assessment protocol, adapted to sample macro invertebrates in the arid Great Basin streams.

## C.2. Ground Water-Related Assessments

Many ground water quality assessments have been performed in Nevada, involving several agencies such as the Bureau of Health Protection Services (BHPS), Clark County and Washoe County District Health Departments, NDEP, State Engineer, Desert Research Institute (DRI), University of Nevada Cooperative Extension, BLM, U.S. Bureau of Reclamation, USGS and the Environmental Monitoring and Support Laboratory (EMSL) of the EPA. These sampling efforts have been divided into three categories: 1) to regionally describe ground water quality; 2) to monitor ground water quality at withdrawal points in relation to intended uses; and to 3) monitor the effects of potential sources of contamination on ground water quality.

NDEP is developing a state-wide ground water assessment as an important component of the

Comprehensive State Ground Water Protection Program (CSGWPP). NDEP utilizes a Geographic Information System (GIS) to create several layers of data and to generate analytical results from those data. The eventual goal is to prioritize the ground water basins in Nevada. Preliminary demonstrations have shown that basins might be prioritized using criteria such as: 1) the number of wells with nitrate concentrations detected above the drinking water standard; 2) the number of open corrective action sites [including leaking underground storage tanks (LUSTs)]; 3) the number of areas exceeding the NDEP policy on septic system density; and 4) the number of potentially contaminated sites on federal facilities. For more information on the statewide ground water assessment program, please consult the *State of Nevada Comprehensive State Ground Water Protection Program* document (Appendix 2, #4).

As another important component of Nevada's CSGWPP, NDEP implements the Wellhead Protection Program (WHPP). The primary goal of the WHPP is the protection of ground water sources of public drinking water through the implementation of contaminant source control at the community level. The program also provides technical and financial assistance to local entities. NDEP has assisted in several communities' WHPP efforts. For more information on the statewide Wellhead Protection program, consult the *State of Nevada Wellhead Protection Program* document (Appendix 2, #5).

The Nevada State Health Division administers Nevada's Source Water Assessment Program. In Nevada, both ground water and surface water are important sources of drinking water. Many ground water sources have been assessed under the State's Vulnerability Assessment (VA) program and several systems are participating in the Wellhead Protection Program. A greater challenge exists in assessing the State's three large surface water sources, Lake Tahoe, the Truckee River and the Colorado River. The Health Division is coordinating with NDEP and numerous other agencies, and incorporating many existing efforts, such as integrated watershed planning, wellhead protection, sanitary surveys, vulnerability assessments, pesticide management plans, and other source-water related activities.

The Department of Agriculture (DOA) has the authority to regulate pesticide use in Nevada, including restricting and banning the use of specific pesticides either by agricultural area or statewide. In addition, DOA has completed *Nevada's Generic State Ground Water Protection Pesticide Management Plan*. The document outlines the mechanism to evaluate the potential and existing pesticide occurrences in ground waters. NDEP cooperates with NDOA in a yearly rotating pesticide monitoring program in which NDOA collects ground water samples in selected areas across the State and NDEP collects surface water samples in the same areas.

### C.3. Atmospheric Deposition Contribution

Except for Washoe and Clark counties, the State of Nevada is in attainment for all ambient air quality standards. While Nevada does have permitting programs in place designed to prevent significant deterioration of existing air quality, additional air pollution control programs have not been necessary in the majority of the state. There are three exceptions: Washoe and Clark counties and the Tahoe Basin. Because of the pristine and fragile nature of the Tahoe Basin, a number of studies are currently being conducted to evaluate the impact of atmospheric

deposition. In addition, a monitoring network has been set up around the lake shore to monitor the criteria pollutants and evaluate the impact of pollutants transported into the basin. Washoe and Clark counties have a number of control measures in place, including automotive inspection and maintenance programs, requirements for the use of reformulated gasoline, wood burning control programs, heavy duty diesel testing programs and fugitive dust regulations.

#### *D. Major Areas of Concern*

Based on the water quality assessments, there are three major, broad areas of concern in regard to nonpoint sources of pollution in the State of Nevada: urban, agricultural issues and hydrologic modifications. Nevada is a rapidly growing state and is also the most arid state in the Nation. The combination of these two factors puts an enormous pressure on water-related issues. In this context, Nevada's future NPS concerns are mostly related to rapid urbanization of agricultural lands, loss of natural mechanisms that prevent degradation of water quality, such as wetlands, floodplains, vegetation cover and riparian areas, and integration of the potential contribution of pollution from nonpoint sources to the TMDL process. NDEP is committing efforts and resources to these areas, as can be noted throughout this document.

##### *D.1. Urban issues*

Not surprisingly, the majority of Nevadans lives in the same areas that encompass the great majority of the State's waters. In the southern part of the State, within the Colorado River watershed, 1,192,200 Nevadans (67% of the State's population in 1997) live and conduct their activities. In the northern part of the State, within the Carson and the Truckee River watersheds, another 359,110 Nevadans (20% in 1997) reside. Thus, 87% of the State's population is located within the State's two major population areas, namely the Las Vegas Valley and the Reno/Sparks/Carson City area (See Appendix 2, #7 and map 3). Nevada is the most urbanized state in the nation, and is experiencing a rapid rate of growth in its urban areas. This generates continued pressure on scarce water resources, both for water quality and for quality of life. Nevada's nonpoint source program addresses urban-related issues through the implementation of the following strategies: the establishment and support of Comprehensive Resource Management Plans, which is a mechanism that facilitates bringing various stakeholders with different concerns under a consensus-building process; the establishment of several public education/public outreach programs that address urban issues such as storm water, raising awareness about nonpoint sources of pollution, waste recycling and reduction, education of decision-makers and developers on proper land use planning and development; and implementation of projects that restore, minimize or prevent loss of riparian habitat.

##### *D.2. Agricultural Issues*

Most of the agriculture conducted in Nevada is cattle grazing on public lands or some combination of private and public lands, some irrigated crop production, and some animal feedlot operations. Some examples of the strategies which Nevada's nonpoint source program has developed to address these issues are: mechanisms to coordinate protective measures with Federal land owners, such as state-wide education programs to increase knowledge of, and

implementation of proper grazing management practices; and implementation of demonstration projects that protect riparian buffer areas.

### D.3. Hydrologic Modifications

In Nevada, hydrologic modifications impact every river system in the state. They are present on scales ranging from monumental structures on the Colorado River to farm irrigation ditches. By its nature, hydromodification is directly related to other activities such as agriculture, power generation, road construction, urban growth and land development, silviculture and mining activities. In Nevada, the conversion of wetlands to agricultural lands and to urban development is especially of concern. This process has an indirect detrimental impact on water quality because it eliminates the water quality benefits provided by wetlands, besides providing water quality impacts related to the activities themselves. Strategies to address this issue include the use of fluvial geomorphology analyses as the basis for channel stabilization projects, mitigate for wetlands losses, ensure that project designs include preservation and/or restoration of proper stream function, such as floodplain access, meander patterns, transportation and deposition of sediment, ground water recharge, wetlands functions, habitat, etc.

### E. *Categories of Nonpoint Source Pollution -- (Key Element #4)*

The categories and subcategories of nonpoint source pollution addressed by Nevada's nonpoint source program are: Agriculture (irrigated crop production, pasture land, range land, feedlots and animal holding/management areas); Silviculture (harvesting, reforestation, residue management, road construction/maintenance and forest management); Urban Runoff; Construction; Land Disposal (individual sewage disposal systems only); and Hydrologic and Habitat Modification.

The following is a description of each of the categories and the constituents of concern; the BMPs that apply to each category can be found in Chapter V. For a detailed discussion on strategies to address these categories of NPS pollution, see Chapter IV, page 13.

#### E.1. Agriculture

The main subcategories of activities that present potential for nonpoint source pollution contribution in Nevada are: irrigated crop production, pasture land, range land, feedlots, and animal holding/management areas. Hay production is the main crop in Nevada and uses the largest amount of irrigated land. Return flows, runoff and leachate from irrigated lands may transport sediment, organic compounds, nutrients, pesticides, salts, metals, bacteria, viruses and other micro-organisms to surface and ground waters. Livestock containment facilities can also contribute sediments, bacteria, viruses and other microorganisms, oxygen-demanding substances, nitrogen and phosphorus. Grazing can lead to riparian area damage and channel instability; it also provides direct input of nutrients to stream channels.

#### E.2. Silviculture

Silvicultural-related activities that occur in Nevada include harvesting, reforestation, residue

management, road construction/maintenance and forest management. Pollutants of primary concern are sediment, nutrients, pesticides and herbicides. Although silvicultural activities are limited in Nevada, they generally take place on lands that contain streams of extremely high water quality.

### E.3. Construction

Construction activities including highway, road and bridge construction and maintenance and land development activities have the potential to cause long-term nonpoint source impacts. Sediment and nutrients are pollutants of primary concern during construction activities. Runoff from highways and roads may contain sediment, nutrients, pesticides, metals, petroleum products and de-icing agents. Highway, road and land developments disturb large land areas, remove native vegetation, destroy valuable wetlands, and increase areas of impermeable surfaces. The NPS program coordinates with the NPDES Stormwater program regarding construction activities.

### E.4. Urban Runoff

Nevada's land use is characterized by vast areas of land containing sparsely distributed small rural communities and agricultural activities; and two major population centers, the Las Vegas/Henderson and the Reno/Sparks/Carson City urban areas. It is in these two latter areas that urban runoff presents the most significant threat to water quality. In the most arid state in the Union, storm events are infrequent. However, when they do occur, significant volumes of surface runoff are generated, which flush impervious surfaces. Although these runoff events are of short duration, the water quality impacts can be severe. Dry weather urban runoff is increasing, especially in Las Vegas, due to landscape irrigation and dewatering practices. Urban runoff may contain a variety of pollutants including sediment, nutrients, pesticides, petroleum products, metals, and suspended and dissolved solids; it also causes temperature oscillations, which can be very detrimental to fish and wildlife. Future NDEP activities to address this NPS category include an expansion of the education/outreach component to include as many communities as possible, review and update (if necessary) the related BMPs, and incorporate these activities in the watershed management and TMDL processes.

### E.5. Land Disposal

"Individual sewage disposal systems (ISDSs)" is the only subcategory of the Land Disposal source category that is addressed in the nonpoint source management plan. Malfunctioning and poorly sited septic tanks and leach fields are potential sources of ground and surface water contamination. Degradation of groundwater drinking supplies from nitrate, phosphorus, and pathogen contamination is of primary concern. The NPS program coordinates with the Ground Water Protection program regarding this category. Other land disposal activities are regulated under other NDEP programs.

### E.6. Hydrologic and Habitat Modification

Hydrologic and habitat modifications include a variety of activities which alter the hydrology and wildlife habitat associated with wetlands and riparian areas. These activities include channelization, dredging, development, dams/impoundments, flow regulation and modification, stream bank modifications, and destruction of riparian vegetation. Such activities can produce water quality degradation due to sediment, nutrients, dissolved solids, thermal alterations and other chemicals that may be sorbed to soil particles (for example phosphorus and mercury). These activities also disturb the land and create favorable circumstances for establishment of invasive and opportunistic weeds. In Nevada, the conversion of wetlands to agricultural lands and to urban development is specially of concern. This process has an indirect detrimental impact on water quality because it eliminates the water quality benefits provided by wetlands. Pollutants of primary concern which are generated by these modifications include sediment, nutrients, pesticides/herbicides, dissolved solids, coliform and pathogen, metals, and elevated temperatures.

#### E.7. Nonpoint Source Categories Not Addressed in the updated SMP

Some of the categories and subcategories of nonpoint source pollution, as defined in the Section 319 guidance will not be addressed in this document. Generally, the sources not addressed have adequate regulatory programs in place. These source categories will be discussed below and the appropriate regulatory program identified. The nonpoint source program coordinates with these programs to the extent possible in order to avoid unnecessary duplication of efforts.

##### 1) Resource Extraction, Exploration and Development:

As discussed in Chapter VI of this document, the State of Nevada regulates, as point sources and through the Bureau of Mining Regulation and Reclamation, many mining activities traditionally considered nonpoint sources. In addition, Nevada's Mined Lands Reclamation Bill (also described in Chapter VI) requires reclamation of lands disturbed by mining activities. The scope of these provisions delegates regulatory and enforcement authorities to specific programs within the state and significantly reduces the numbers and types of mining related activities that are considered nonpoint sources. For example, runoff from waste rock dumps is regulated primarily under State Water Pollution Control permits and also falls under the NPDES Storm water program. Other mining related activities such as road construction and hydrologic modifications are covered under appropriate NPS categories. NDEP will be developing plans to address water quality issues as they relate to abandoned mines, either coordinating with the Ground Water Protection program or with the Nonpoint Source program.

##### 2) Land Disposal:

The Land Disposal source category includes sludge, wastewater, landfills, on-site wastewater systems and hazardous waste subcategories. Of these subcategories, only on-site wastewater systems (septic systems) are addressed in the updated SMP. Sludge and wastewater are regulated by NDEP's Bureau of Water Pollution Control, through Nevada's Water Pollution Control Law, Water Pollution Control Regulations, and Solid Waste Regulations and Management Plan, Hazardous waste is regulated by NDEP's Bureau of Waste Management through the State's

Hazardous Waste Regulations and Management Plan. For a more detailed discussion of these programs, please see Chapter VI.

3) Other:

Under this general category are the following activities: atmospheric deposition, storage tank leaks, highway maintenance and runoff, spills, in-place contaminants and natural nonpoint source pollution (background). Atmospheric deposition and in-place contaminants are not considered major pollution problems in Nevada (for more discussion on this, see Chapter II, part C.3). Storage tank leaks and spills are addressed by NDEP's Bureau of Corrective Actions through the Hydrocarbon Clean-up Program. Highway maintenance of runoff is considered a nonpoint source of pollution and is discussed in the "Construction" and Urban Runoff" sections of Chapter II.

*F. Prioritization of Watersheds for NPS Protection Activities*

As part of the statewide strategies to implement the Clean Water Action Plan objectives, Nevada has prioritized the State's watersheds and developed a Unified Watershed Assessment. This was accomplished according to several criteria and in a collaborated and coordinated manner. The Nevada Ecosystem Advisory Team (NEAT) participants, Federal, State and local agencies, and citizens in general had an opportunity to provide comments and recommendations. Initially, the section 303(d) list of impaired waters was used to demonstrate water quality concerns (Map 5). Other reports and documents were also considered. The condition and function of both riparian and upland areas were considered to determine whether a watershed was functioning properly. Watersheds were delineated using the USGS's 8-digit hydrologic cataloging unit. Watersheds were divided into four categories: Category 1, which are the watersheds in need of restoration; Category 2, which are the watersheds not in need of restoration but which may or may not need preventive action to sustain water quality; Category 3, which are the watersheds with pristine or sensitive aquatic system conditions; and Category 4, which are the watersheds with insufficient data to make an assessment. (Please see Attachment 1 for more detail.) Only watersheds in Category 1 were prioritized (map 6). The top six Category 1 watersheds in the State are: 1) the Truckee River Basin; 2) the Middle Carson River Sub-watershed; 3) the Carson Desert Region; 4) the Las Vegas Wash; 5) the Upper Carson River Sub-watershed; and 6) the Lake Tahoe Basin.

The NPS program also coordinates the watershed approach to restoring water quality to the water bodies in Nevada with the TMDL development and revision process. The schedule for the TMDL process for the 303(d) listed waters has been incorporated in the action items for the implementation of the NPS program. Detailed tables showing the milestones and time frames can be found in Chapter III, tables 1.a. through 1.h.

### **III. Nonpoint Source Program Strategies**

Nevada's Nonpoint Source program is largely voluntary with a regulatory component. The program is implemented using a balanced approach which emphasizes statewide programs, projects that address priority NPS categories, and watershed or site-specific projects that address impaired or threatened waters in priority watersheds. Implementation of the NPS protection activities at the watershed level involves the participation of local stakeholders, typically organized in a Comprehensive Resource Management group. Education and public outreach are major components of the program, which emphasize preventive measures and activities. Partnering with federal, state and local agencies and other interest groups is also an essential component of the implementation strategy. The NPS program also builds on regulatory efforts, through the partnering element of the program and through the implementation of water quality-based mechanisms, such as the development of TMDLs.

Nevada's nonpoint source program addresses water quality issues of impaired or partially impaired waters of the State; it also protects waters of higher quality from degradation from nonpoint sources of pollution. Nevada places a special emphasis on prioritizing section 319(h) resources to address section 303(d) listed water quality impairments attributed to NPS activities. The program works in coordination with the regulatory programs of the State, such as the NPDES permit program, Department of Agriculture's pesticides use certification program, and the U.S. Army Corps' 404 permit program and 401 Water Quality Certification Program.

The NPS program and several collaborating agencies review and prioritize the state waters on a periodic basis. The review and prioritization process is based on the section 303(d) list of impaired waters and on other sources of information from the collaborating agencies. NRCS is an important collaborator in the coordinated effort and information on NRCS's programs, such as the Environmental Quality Incentive Program (EQIP) is used to prioritize and focus resources.

#### **A. *Goals and Milestones***

The State has identified the following long- and short-term goals to protect surface and ground waters:

*Goal #1: to achieve a downward trend in pollutant loads due to nonpoint sources of pollution for Section 303(d) listed waters; to focus on the five top priority watersheds; and to have in place TMDLs and/or CRMPs in these watersheds within the next 15 years.*

Water quality trends are measured and reported every two years in Nevada's 305(b) report. Success will be to observe long-term downward trends in nonpoint source-related pollutants as documented in section 305(b) reports, the section 303(d) list and NPS assessments. This goal is accomplished through the achievement or attainment of the following short term objectives and milestones:

**Table 1 -- Milestones -- Goal #1**

<b>Objectives / Milestones</b>	<b>FFY 2000</b>	<b>FFY 2001</b>	<b>FFY 2002</b>	<b>FFY 2003</b>	<b>FFY 2004</b>
1. Assess water quality impairments and identify sources and causes					
1.a. assess water quality trends and identify and update sources	* _	_	_	_	_
2. Evaluate and update pollution-reduction strategies					
2.a. evaluate watershed strategies	*	_		_	
2.b. evaluate statewide strategies	* _				_
3. Prioritize source categories and watersheds					
3.a. prioritize watersheds for the entire State	* _				_
3.b. prioritize source categories statewide	* _				_
3.c. prioritize source categories per watershed	* _	_	_	_	_
4. Develop and implement strategies to address sources					
4.a. update NPS SMP					_
4.b. develop/update watershed strategy for priority watersheds with local watershed groups (see following tables for details)	* _	_	_	_	_
4.c. develop and update the Handbook of BMPs	*	_		_	
5. Develop a monitoring program					
5.a. develop strategies to monitor water quality trends due to NPS pollution	_				
5.b. develop strategies to measure efficacy of BMPs	_				
6. Implement a feed-back mechanism					
6.a. evaluate achievement of this goal					_
6.b. revise an update milestones as necessary					_

\* Indicates milestone currently being addressed or already addressed before year 2000. See Chapter IV,

“Approaches to Achieving the NPS Program Goals” for a detailed discussion.

**Table 2 -- Milestones -- Goal #1 (cont.) -- Truckee River Watershed**

Key Watershed Issues: Water quality, noxious weeds, riparian habitat, urban runoff, Steamboat Creek NPS pollutant loading (see Table 3).

<b>Strategy Actions to Address Nonpoint Sources of Pollution</b>	<b>FFY 2000</b>	<b>FFY 2001</b>	<b>FFY 2002</b>	<b>FFY 2003</b>	<b>FFY 2004</b>
1) Develop a Watershed Management group (i.e. CRMP) Washoe Co, Reno, Sparks coordinating group, Steamboat Crk Steering Committee (see table 3)	* _			—	
2) Develop a Technical Comprehensive Watershed Study Coordinated Monitoring Program and Watershed Modeling Project both underway	* _	—			
3) Hire a Watershed Coordinator	—		—		
4) Develop a Comprehensive Restoration Plan	—		—		
5) Establish Stakeholder's Network Base	* _				
6) Establish Regular Meetings Groups listed in 1), above meet regularly	* _				
7) Gain Regulatory Buy-in or Coordination	* _				
8) Prioritize Issues and Concerns (Future Projects)	—	—	—	—	
9) Identify Sources of Funding	—	—	—	—	
10) Implement Restoration Projects	—	—	—	—	—
11) Implement Watershed-wide Education Component	—	—	—	—	—
12) Design and Implement a Monitoring Program	—	—	—		
13) Design and Implement a Maintenance Program	—	—	—		
14) Design and Implement a Process Revision Mechanism		—	—		
15) Create a GIS for the Watershed		—	—		
16) Acquire Watershed Modeling Capabilities		—	—		
17) Coordinate Watershed Management Efforts with TMDLs Development--TMDL review/revision underway	* _				

\* Indicates milestone currently being addressed or already addressed before year 2000. See Chapter IV.A.2.2, for a detailed discussion.

**Table 3 -- Milestones -- Goal #1 (cont.) -- Steamboat Creek Watershed**

Key Watershed Issues: Water quality, noxious weeds, riparian habitat, urban runoff, agricultural return flows.

Steamboat Creek Restoration Plan:

Goals: Improve Steamboat Creek water quality, restore Steamboat Creek to a sustainable condition, re-establish vegetation and wildlife habitat appropriate for stream reaches, and combine recreation with stream restoration in areas designated for public access.

<b>Strategy Actions to Address Nonpoint Sources of Pollution</b>	<b>FFY 2000</b>	<b>FFY 2001</b>	<b>FFY 2002</b>	<b>FFY 2003</b>	<b>FFY 2004</b>
1) Develop a Watershed Management group (i.e. CRMP) Steamboat Creek Steering Committee.	* _				
2) Develop a Technical Comprehensive Watershed Study Initial Fluvial Geomorphic Studies completed.	* _				
3) Hire a Watershed Coordinator Steamboat Creek Project Coordinator hired through the Washoe Storey Conservation District using 319 funds.	* _				
4) Develop a Comprehensive Restoration Plan Steamboat Creek Restoration Plan completed 1998.	* _				
5) Establish Stakeholder's Network Base	* _				
6) Establish Regular Meetings Steamboat Creek Steering Committee meets monthly.	* _				
7) Gain Regulatory Buy-in or Coordination Corps of Engineers Nationwide Permit 27 received by Washoe Storey Conservation District. All proposed Section 404 projects must go through the Steering Committee review prior to receiving a Corps permit and must adhere to the Steamboat Creek Restoration Plan.	* _	_			
8) Prioritize Issues and Concerns (Future Projects)	_	_	_	_	
9) Identify Sources of Funding CWAP FY99 319 funding restoration projects.	_	_	_	_	
10) Implement Restoration Projects CWAP FY99 319 funding restoration projects.	_	_	_	_	_
11) Implement Watershed-wide Education Component	_	_	_	_	_
12) Design and Implement a Monitoring Program	_	_	_		
13) Design and Implement a Maintenance Program		_	_	_	
14) Design and Implement a Process Revision Mechanism		_	_		
15) Create a GIS for the Watershed		_	_		
16) Acquire Watershed Modeling Capabilities		_	_		

\* Indicates milestone currently being addressed or already addressed before year 2000. See Chapter IV.A.2.2, for a detailed discussion.

**Table 4 -- Milestones -- Goal # 1 (cont.) -- Carson River Watershed**

Key Issues: Bank erosion/stability, water quality, habitat loss, noxious weeds, agricultural return flows

Upper Carson River Watershed Management Committee:

Goal: To develop an openly accessible network of technical, financial, and political support from private and public sectors that will assist interested private landowners, tribal government, and agencies in voluntary planning and implementing ways to enhance the natural resource values of the Upper Carson River watershed area.

Middle Carson River CRMP:

Vision: To achieve a stable, healthy river system that provides for abundant agricultural production, wildlife habitat, recreation opportunities, stable river banks, and high water quality conditions. To establish cooperative relations where the private landowners, county, state, and federal agencies maintain their lands and work cooperatively and openly to solve watershed problems. To attain a water control system that reduces flooding, erosion, river migration and provides recreation for all.

Lower Carson River CRMP:

Goal: To restore the lower Carson river to a healthy river environment. To re-establish channel capacity to reduce the threat of flooding, to reduce sediment load in the river by reducing erosion in riparian areas, to increase recharge of the basalt aquifer used for municipal water by increasing river flows, to improve wildlife habitat and to improve water quality.

Objectives / Milestones	FFY 2000	FFY 2001	FFY 2002	FFY 2003	FFY 2004
1) Develop Watershed Restoration Plans for each Sub-watershed Upper Carson River Watershed Management Plan, 1996 Middle Carson River CRMP, 1996 Lower Carson River CRMP, 1995	* _				
2) Hire a Watershed Plan Coordinator Each group has a watershed coordinator funded with Section 319 grants. Additional coordination among the 3 groups being facilitated by the Carson River Subconservancy District	* _				
3) Develop a Network of Stakeholders to Implement the Plan Subconservancy District putting together combined stakeholders network for whole basin plan.	* _	—	—	—	—
4) Obtain Regional Permits to Address Restoration Activities Middle Carson River CRMP has Nationwide 27 permit to cover multiple restoration activities	* _	—	—	—	—
5) Coordinate and Streamline the Regulatory Permit Process	—	—	—	—	—
6) Develop a River Basin-wide Approach to Address Local Issues Subconservancy District facilitating development of integrated watershed plan for entire basin	* _	—	—	—	—
7) Identify Potential Funding Opportunities Each subwatershed receiving CWAP funds in FY99 as category 1 priority watersheds.	* _	—	—	—	—

8) Promote Community “Watershed Clean-Up” Days Watershed clean up days held annually in each subwatershed.	* —	—	—	—	—
9) Implement Restoration Projects Restoration projects implemented in each subwatershed based on priorities outlined in the subwatershed restoration plans. FY99 CWAP funding restoration projects in each subwatershed.	* —	—	—	—	—
10) Develop a River Basin-wide Education Program		—	—	—	—
11) Coordinate TMDL Review Process					—

\* Indicates milestone currently being addressed or already addressed before year 2000. See Chapter IV.A.2.2, for a detailed discussion.

**Table 5 -- Milestones -- Goal # 1 (cont.) -- Las Vegas Wash Watershed**

Key Watershed Issues: Wetlands loss, erosion, groundwater inflow quality, urban runoff quality, habitat loss.

Las Vegas Wash Coordination Committee:

Mission: The Committee will evaluate all facts, issues, and concerns regarding the Las Vegas Wash in order to develop and implement a practical, comprehensive approach for managing the Wash in a timely manner.

Clark County Wetlands Park:

Goals: Conserve and restore natural resources by protecting and enhancing the ecological resources of the Las Vegas Wash. Create education opportunities to convey the importance and significance of the Wash through various media. Develop recreational and tourism opportunities, based on public needs that are compatible with the conservation/rehabilitation of the Wash. Create social benefits for area residents to gain a sense of community pride and ownership of the park. Complete a master plan that will guide the design and development of the Park's recreational facilities and support infrastructure.

<b>Objectives / Milestones</b>	<b>FFY 2000</b>	<b>FFY 2001</b>	<b>FFY 2002</b>	<b>FFY 2003</b>	<b>FFY 2004</b>
1) ID Planning Team Clark County Wetlands Park Group identified as recipient of FY99 CWAP funds, has masterplan which will serve as WRAS initially. The Coordination Committee is developing a Comprehensive Watershed Plan to serve as future WRAS.	* _				
2) Assess NPS Situation Work on going to assess Wash NPS situation through the Coordination Committee, the Lake Mead Water Quality Forum, and review of the existing TMDL. Additional analysis over next few years to aid in water quality standards revisions and TMDL review.	* _	_	_		
3) ID Watershed Coordinator Southern Nevada Water Authority currently funding Coordination Committee and coordinator for Comprehensive Watershed Plan.	* _				
4) Develop Stakeholder Network	* _	_			
5) Develop a Technical NPS Restoration Plan Comprehensive Watershed Plan to be completed by Coordination Committee by January, 2000.	* _	_			
6) Implement Restoration Projects CWAP FY99 319 restoration projects will be implemented in the wetlands park under the Wetlands Park Master Plan.		_	_	_	_
7) Implement an Educational / Outreach Program	_	_	_	_	_
8) Develop and Implement a Maintenance/Monitoring Plan			_	_	_
9) Develop and Implement a Feedback/Revision Mechanism					_
10) Coordinate with TMDL Review Process	_				

\* Indicates milestone currently being addressed or already addressed before year 2000. See Chapter IV.A.2.2, for a detailed discussion.

**Table 6 -- Milestones -- Goal # 1 (cont.) -- Lake Tahoe Basin**

Key Watershed Issues: Watershed erosion, lake sedimentation, accelerated eutrophication and loss of lake clarity.

Environmental Improvement Program (EIP):

Goal: Strategy to achieve environmental goals for the Lake Tahoe Basin through implementation of capital improvement projects and programs. The goals are the environmental threshold carrying capacity standards for Lake Tahoe.

<b>Objectives / Milestones</b>	<b>FFY 2000</b>	<b>FFY 2001</b>	<b>FFY 2002</b>	<b>FFY 2003</b>	<b>FFY 2004</b>
1) ID Planning Team TRPA has established the planning teams for all aspects of the EIP	* _				
2) Assess NPS Situation Environmental threshold carrying capacity standards and level of achievement evaluated by TRPA. Monitoring of BMPs and their effectiveness needed to determine if improvements are occurring. Tahoe Basin Assessment to be final in FY 2000.	* _	_			
3) ID Watershed Coordinator TRPA is recognized coordinator.	* _				
4) Develop Stakeholder Network	* _	_			
5) Develop a Technical NPS Restoration Plan Current EIP will be refined as additional information is received and projects are implemented.	* _				
6) Implement Restoration Projects Erosion control and SEZ Restoration projects being implemented through the Tahoe Bond Act and 319 program. Additional Bond Act funding for future years approved. Tahoe is a category 1 priority watershed, TRPA will receive CWAP FY99 319 funds for implementation of EIP restoration projects.	* _	_	_	_	_
7) Develop and Implement a BMP Maintenance/Monitoring Plan			_	_	_
8) Develop and Implement a Feedback/Revision Mechanism					_

\* Indicates milestone currently being addressed or already addressed before year 2000. See Chapter IV.A.2.2 for a detailed discussion.

**Table 7 -- Milestones -- Goal # 1 (cont.) -- Walker River Watershed**

Key Watershed Issues: Water quality (irrigation return flows, TSS, natural compounds), groundwater draw down, hydrologic modification, declining Walker Lake levels, invasive weeds.

Active local groups include Mason Valley Conservation District, Walker River Basin Advisory Committee and Walker River Technical Network.

<b>Objectives / Milestones</b>	<b>FFY 2000</b>	<b>FFY 2001</b>	<b>FFY 2002</b>	<b>FFY 2003</b>	<b>FFY 2004</b>
1) ID Planning Team Meet with all current planning groups within the watershed and educate them about the CWAP and WRAS process and available funding. ID group which will take lead in WRAS development.	* —				
2) Assess NPS Situation NDEP currently preparing State Assessment Report update.	* —	—	—		
3) ID Watershed Coordinator	* —				
4) Develop Stakeholder Network Each current planning group has a stakeholder network. All stakeholders will be included.	* —	—			
5) Develop a Technical NPS Restoration Plan		—	—		
6) Implement Restoration Projects Local projects are being implemented with Section 319 funds. After development of the Restoration Plan, watershed will be eligible for CWAP funding.	* —	—	—	—	
7) Develop and Implement a Maintenance/Monitoring Plan			—	—	
8) Develop and Implement a Feedback/Revision Mechanism					—
9) Coordinate with TMDL Review Process					—

\* Indicates milestone currently being addressed or already addressed before year 2000. See Chapter IV.A.2.2, for a detailed discussion.

**Table 8 -- Milestones -- Goal # 1 (cont.) -- Humboldt River Watershed**

Key Watershed Issues: Water quality, hydrologic modification, resource extraction, agricultural return flows

<b>Objectives / Milestones</b>	<b>FFY 2000</b>	<b>FFY 2001</b>	<b>FFY 2002</b>	<b>FFY 2003</b>	<b>FFY 2004</b>
1) ID Planning Team Meet with the current groups involved with planning on the Humboldt River and educate them on CWAP and watershed planning. Identify lead group(s) for development of the watershed plan(s).	—				
2) Assesses NPS Situation NDEP currently preparing State Assessment Report update. Several other assessment studies are being conducted by various government and government-private partnerships.	* —	—	—		
3) ID Watershed Coordinator	—				
4) Develop Stakeholder Network	—	—			
5) Develop a Technical NPS Restoration Plan			—	—	
6) Implement Restoration Projects			—	—	—
7) Develop and Implement a Maintenance/Monitoring Plan				—	—
8) Develop and Implement a Feedback/Revision Mechanism					—
9) Coordinate with TMDL Review Process	* —				

\* Indicates milestone currently being addressed or already addressed before year 2000. See Chapter IV.A.2.2, for a detailed discussion.

*Goal #2: to educate (and involve) Nevadans about appropriate water quality protection activities related to priority nonpoint sources, focusing on urban issues and on riparian area health.*

This goal will be measured through several program-specific surveys on acquired knowledge and on behavior modification toward more protective actions in relation to knowledge acquired. Success will be to have implemented the education program and applied the survey in all major watersheds in the state in fifteen years. This goal is accomplished through the achievement or attainment of the following short term objectives and milestones:

**Table 9 -- Milestones -- Goal #2**

<b>Objectives / Milestones</b>	<b>FFY 2000</b>	<b>FFY 2001</b>	<b>FFY 2002</b>	<b>FFY 2003</b>	<b>FFY 2004</b>
1. Establish / strengthen relationships with technical expert, educators and target groups					
1.a. establish relationships with target groups, focusing on priority NPS categories (e.g. CDS, Cattlemen's Association)	—				
1.b. establish relationships with watershed-based stakeholder groups, focusing on priority watersheds (see Appendix 1 and watershed matrices under Goal #1)	—				
1.c. establish relationships with potential partners having education and / or technical expertise	—				
1.d. establish / participate in Technical Task Forces	—	—	—	—	—
2. Develop education program for two priority NPS categories (agriculture and urban runoff)					
2.a. develop general framework for educational program	—				
2.b. work with education / technical experts to develop program		—			
2.c. work with experts to develop survey strategy and instrument		—			
3. Implement program					
3.a. implement education program in one or more priority watersheds			—		
3.b. implement education program statewide by NPS category				—	
4. Conduct survey by NPS category where education program has been implemented					
4.a. conduct pre / post education survey			—		—
4.b. compile, summarize and interpret results					—
5. Evaluate effectiveness of program (where it has been implemented)					
5.a. work with education experts to evaluate and revise program based on survey results					—
6. Communicate successes of watershed activities and / or BMPs					

6.a. to the public in general (communities, stakeholders, etc.)	—	—	—	—	—
6.b. to other Federal, State, Tribes and / or local agencies	—	—	—	—	—

*Goal #3: to coordinate water quality activities with a broad range of State Federal, local agencies and Tribes, to achieve implementation of BMPs (or other NPS control measures) associated with priority NPS categories, as they relate to each agencies' mandates.*

Success will be achieved when all pertinent collaborators are actively participating in the NPS task force, within five years. Longer term success will be demonstrated by lasting relationships with collaborators and implementation of cooperative projects. This goal is accomplished through the achievement of the following short term objectives and milestones:

**Table 10 -- Milestones -- Goal #3**

<b>Objectives / Milestones</b>	<b>FFY 2000</b>	<b>FFY 2001</b>	<b>FFY 2002</b>	<b>FFY 2003</b>	<b>FFY 2004</b>
1. Identify potential partners					
1.a. evaluate NEAT participants list and expand to include necessary partners	—				
1.b. contact potential new partners and extend invitation to join NEAT		—			
2. Strengthen role of NEAT					
2.a. rotate leadership role every two years			—		—
2.b. define NPS task force role for new participants	—				
2.c. evaluate need for sub-committees	—	—	—	—	—
3. Develop or renew MOUs / MOAs					
3.a. review existing memoranda with BLM, USFS, NRCS, State agencies / ID needs for new memoranda	—	—	—	—	—
3.b. meet with agency representatives to discuss renewal/	—	—	—	—	—
3.c. review 303(d) listed waters in relation to federal lands / develop strategies to address any WQ impairments	—	—	—	—	—
3.d. meet with agency representatives to discuss establishing an agreement			—		
3.e. coordinate with NDEP Bureau of Federal Facilities on NPS issues on DOE / DOD lands	—	—	—	—	—
4. Develop a process for data sharing					
4.a. identify important sources of data and of potential recipients of NPS program data		—			
4.b. meet with sources / recipients and discuss needs, format conventions and data transfer mechanisms			—		
5. Develop a process to evaluate effectiveness of partnerships					

5.a. establish success indicators				—	
5.b. establish annual review process					—

**APPENDIX 1**

## **APPENDIX 2**

## **APPENDIX 3**

## **APPENDIX 4**

## **APPENDIX 5**